

L7 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:123106 CAPLUS <<LOGINID::20070313>>  
DN 141:324459  
TI Synthesis of mesoporous molecular sieves with secondary building units of Y zeolite by using surfactants in low concentration as template  
AU Liu, Su; Kong, Ling-dong; He, A-di; Li, Quan-zhi  
CS Department of Environmental Science and Engineering, Fudan University, Shanghai, 200433, Peop. Rep. China  
SO Fudan Xuebao, Ziran Kexueban (2003), 42(6), 1003-1006  
CODEN: FHPTAY; ISSN: 0427-7104  
PB Fudan Daxue Chubanshe  
DT Journal  
LA Chinese  
AB Mesoporous aluminosilicates with the structure of MCM-41 have been synthesized in alkaline situation, by using the mixture of cationic and anionic surfactants in very low concentration ( $x_{\text{surf}}/x_{\text{SiO}_2} = 0.07$ ) as template and the get containing secondary building units of Y zeolite as precursors. XRD, FT-IR and N<sub>2</sub> adsorption and desorption isotherms prove that this material has ordered hexagonal structure with Y zeolite secondary unit in its pore walls, which are thicker than the walls of MCM-41 materials synthesized by normal hydrothermal ways. SEM image shows a very unusual net-like morphol. of the material, different from the common loose shape of MCM-41. After being treated in 100% water vapor at 600° for 10 h, the structure of mesopore can still be sustained, showing high hydrothermal stability.

L7 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2002:44784 CAPLUS <<LOGINID::20070313>>  
DN 136:237362  
TI Controlled Solubilization of Toluene by Silicate-Catanionic Surfactant Mesophases as Studied by in Situ and ex Situ XRD  
AU Lind, Anna; Andersson, Jenny; Karlsson, Stefan; Aagren, Patrik; Bussian, Patrick; Amenitsch, Heinz; Linden, Mika  
CS Department of Physical Chemistry, Aabo Akademi University, Turku, FIN-20500, Finland  
SO Langmuir (2002), 18(4), 1380-1385  
CODEN: LANGD5; ISSN: 0743-7463  
PB American Chemical Society  
DT Journal  
LA English  
AB Mesoscopically ordered silicate-surfactant composite materials of the M41S type synthesized in the presence of a swollen agent were characterized by in situ and ex situ x-ray diffraction anal. The key feature of the room-temperature synthesis is the use of a mixture of cationic and anionic surfactants as structure-directing agents. The lower interfacial charge d. of the mixed surfactant aggregates stabilizes structures of lower interfacial curvature and therefore facilitates a more controlled solubilization of organic swelling agents. An increased solubilization capacity of the catanionic surfactant-silicate mesophase was observed close to an anionic/cationic surfactant ratio corresponding to a transition to the lamellar phase in the absence of toluene. In the presence of toluene, the catanionic template stabilizes microemulsion droplets that serve as building blocks for the final material. However, a fair amount of organic compound is solubilized in the SiO<sub>2</sub>-catanionic surfactant composite after the mesophase is formed. Although the present communication concerns mesoporous SiO<sub>2</sub>, the concept is a general one and may give nonsiliceous large-pore materials.

NEWS IPC8      For general information regarding STN implementation of IPC 8  
NEWS X25      X.25 communication option no longer available

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FILE LAST UPDATED: 12 Mar 2007 (20070312/ED)

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<http://www.cas.org/infopolicy.html>

=> s anionic surfactant  
119969 ANIONIC  
259 ANIONICS  
120072 ANIONIC  
(ANIONIC OR ANIONICS)  
189081 SURFACTANT  
169428 SURFACTANTS  
240370 SURFACTANT  
(SURFACTANT OR SURFACTANTS)  
L1 20975 ANIONIC SURFACTANT  
(ANIONIC(W) SURFACTANT)

=> s silicate monomer  
194501 SILICATE  
63951 SILICATES  
223364 SILICATE  
(SILICATE OR SILICATES)  
192326 MONOMER  
154804 MONOMERS  
299813 MONOMER

(MONOMER OR MONOMERS)  
L2 43 SILICATE MONOMER  
(SILICATE(W)MONOMER)

=> s basic silane  
396154 BASIC  
3215 BASICS  
399019 BASIC  
(BASIC OR BASICS)  
86490 SILANE  
33354 SILANES  
100486 SILANE  
(SILANE OR SILANES)  
L3 13 BASIC SILANE  
(BASIC(W)SILANE)

=> s L2 and L3  
L4 2 L2 AND L3

=> s L4 and L1  
L5 2 L4 AND L1

=> d L2 bib abs

L2 ANSWER 1 OF 43 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2007:198261 CAPLUS  
TI Mesoporous silica and method for the production  
IN Takahashi, Shun; Sakamoto, Kazutami; Hiwatari, Kouzou  
PA Shiseido Co., Ltd., Japan  
SO PCT Int. Appl., 37pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007020894	A1	20070222	WO 2006-JP315949	20060811
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	JP 2007045692	A	20070222	JP 2005-234777	20050812
PRAI	JP 2005-234777	A	20050812		
	JP 2005-344421	A	20051129		
AB	The method is performed under electrolyte-free conditions by using a surfactant aggregate structure as a template to produce mesoporous silica having a novel geometrical structure. The mesoporous silica is produced under electrolyte-free conditions by reacting a nonionic surfactant with a water-soluble silicate monomer having a specific structure under neutral conditions. A sheet-like mesoporous silica is produced by using a nonionic surfactant forming a ribbon phase or nematic phase at appropriate temperature ranges and concentration ranges when dissolved in water.				
RE.CNT	9	THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT			

=> d L5 1-2 bib abs

L5 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:1129083 CAPLUS  
DN 143:393066  
TI Oral adsorbents for the treatment of high-phosphorous blood disease  
IN Imada, Tomoyuki; Sakamoto, Kazutami; Tatsumi, Takashi; Matsutani, Naomi;  
Takayanagi, Hiroshi  
PA Ajinomoto Co., Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2005289853	A	20051020	JP 2004-105257	20040331
PRAI	JP 2004-105257		20040331		
AB	Mesoporous silica is orally administered to adsorb phosphoric acid for the treatment of high-phosphorous blood disease. The mesoporous silica is produced from an anionic surfactant, a silicate monomer, and a basic silane				

L5 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:1054452 CAPLUS  
DN 142:40845  
TI method to produce mesoporous silica  
IN Tatsumi, Takashi; Yoshitake, Hideaki; Yokoi, Toshiyuki; Che, Shu-nai;  
Sakamoto, Kazutami  
PA Ajinomoto Co., Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	JP 2004345895	A	20041209	JP 2003-144187	20030521
	US 2004267038	A1	20041230	US 2003-716427	20031120
PRAI	JP 2003-144187	A	20030521		
AB	The mesoporous SiO <sub>2</sub> is produced by mixing an anionic surfactant, a silicate monomer, and a basic silane having a general formula of (R <sub>1</sub> O) <sub>3</sub> Si-X-NR <sub>2</sub> R <sub>3</sub> , where R <sub>1</sub> -3 are linear- or branched-chain alkyl or H, and X is linear- or branched-chain alkylene. The method synthesizes mesoporous SiO <sub>2</sub> having high structural order utilizing the anionic surfactant micelles.				

=> s MCM-41

10526 MCM  
285 MCMS  
10635 MCM  
(MCM OR MCMS)  
241820 41  
5748 MCM-41  
(MCM(W)41)

=> s L1 and L6

L7 7 L1 AND L6

=> d L7 1-7 bib abs

L7 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2007:222801 CAPLUS  
TI Recent progress in the synthesis and selected applications of MCM-41: a short review  
AU Bhattacharyya, S.; Lelong, G.; Saboungi, M.-L.  
CS CRMD-CNRS, Orleans, 45071/2, Fr.  
SO Journal of Experimental Nanoscience (2006), 1(1-4), 375-395  
CODEN: JENOBX; ISSN: 1745-8080  
PB Taylor & Francis Ltd.  
DT Journal  
LA English  
AB Recent progress in the synthesis and applications of MCM-41 based mesoporous materials is reviewed. Since the independent discovery in the early 1990s by groups in the Japan and USA of the formation of mesostructured silica using surfactants as structure directing agents, a variety of alternative synthesis routes have been proposed. These include the use of ionic (both cationic and anionic) surfactants, neutral surfactants based on block and star diblock copolymers, non-surfactant organic compds. and the Stober process for synthesizing silica spheres. The unique properties of MCM-41 based silica materials make them attractive candidates for applications in catalysis, production of novel materials by encapsulating metals, semiconductors and biofluids. Particular attention is given to the use of these composites in biotechnol. including biosensors, biocatalysis and drug delivery.

L7 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:594830 CAPLUS  
DN 145:65493  
TI Synthesis and characterization of mesoporous MCM-41 templated by the mixture of cationic-anionic surfactant  
AU Tai, Xiumei; Wang, Hongxia; Du, Zhiping; Shi, Xiuqi  
CS Daily Chemical Industry, China Research Institute, Taiyuan, 030001, Peop. Rep. China  
SO Tenside, Surfactants, Detergents (2006), 43(2), 103-105  
CODEN: TSDEES; ISSN: 0932-3414  
PB Carl Hanser Verlag  
DT Journal  
LA German  
AB Using the mixture of cationic cetyltrimethylammonium bromide (CTAB) and anionic Sodium Alkyl Epoxy Ethylene Carboxylate (AEC9Na) as template, tetra-Et orthosilicate (TEOS) as silica source, ethylenediamine (EDA) as base source, mesoporous MCM-41 was synthesized at room temperature, characterized by x-ray power diffraction(XRD) and N2 adsorption. The results showed that with the change of the ratio of cationic to anionic surfactant the pore size can be controlled and the mesoporous MCM-41 has larger pore size than that synthesized by using CTAB alone as template.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:225036 CAPLUS  
DN 144:457090  
TI Amino-functionalized mesoporous silica synthesized by an anionic surfactant templating route  
AU Yokoi, Toshiyuki; Yoshitake, Hideaki; Yamada, Takashi; Kubota, Yoshihiro; Tatsumi, Takashi  
CS Department of Chemical System Engineering, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan  
SO Journal of Materials Chemistry (2006), 16(12), 1125-1135  
CODEN: JMACEP; ISSN: 0959-9428  
PB Royal Society of Chemistry  
DT Journal  
LA English

AB A "S-N+.apprx.I- pathway" (S-: anionic surfactant, N+: cationic amino group and I: inorg. species) for the synthesis of mesoporous silica has been developed by using 3-aminopropyltriethoxysilane (APS) as a co-structure directing agent (CSDA), which can interact with the anionic head group in the surfactant (SDA). Thus synthesized mesoporous silica has been designated as AMS (Anionic-surfactant-templated Mesoporous Silica). Removal of the anionic surfactant by extraction led to the functionalized AMS containing amino groups on the silica surface. Amino-functionalized AMS using 3-aminopropyltriethoxysilane (APS) and lauric acid sodium salt (LAS) as CSDA and SDA, resp., was synthesized with varying proportions of APS in the silica sources (x-APS-AMS, where x is the proportion of APS in the silica sources, x = 0.1-0.6). In 0.4-APS-AMS, the content of amino groups derived from APS estimated by CHN elemental anal. and the argentometric

titration

was 2.36 and 2.24 mmol g<sup>-1</sup>, resp., suggesting that almost all the aminopropyl moieties were on the surfaces in contrast to the MCM-41 type materials synthesized with a cationic surfactant. Thus obtained amino-functionalized AMS via the anionic surfactant templating route shows a higher adsorption capacity for Co<sup>2+</sup> cations than amino-functionalized MCM-41 prepared by the direct co-condensation method via a conventional cationic templating route. There was also a marked difference in the activity for the Knoevenagel reaction between amino-functionalized AMS and MCM-41, indicating a significant difference in the state of aminopropyl moieties exposed to the surfaces.

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:70049 CAPLUS  
DN 142:320903  
TI Micro- and mesoporous silicas synthesized in acidic water-ethanol solution of equimolar catanionic surfactant  
AU Wang, Yi Meng; Zhuang, Ting Ting; Cao, Yi; Jiang, Qi; Zhu, Jian Hua  
CS Key Laboratory of Mesoscopic Chemistry, Department of Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China  
SO Journal of Non-Crystalline Solids (2005), 351(4), 346-350  
CODEN: JNCSBJ; ISSN: 0022-3093  
PB Elsevier B.V.  
DT Journal  
LA English

AB Porous silicas with combined micro- and mesoporosity are synthesized in acidic water-ethanol solution of equimolar catanionic mixture, where the mesopores are narrowly and uniformly distributed, and the micropores generate due to the addition of ethanol. To vary the pH value of the synthetic mixture can also change the ratio of micro-/mesopores volume in the resulting samples. Compared with other amorphous silica gels and ordered mesoporous silicas including MCM-41, MCM-48 and SBA-15, these micro- and mesoporous silicas show much improved adsorptive capacity for volatile nitrosamines.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:870435 CAPLUS  
DN 142:55711  
TI Chiral manganese(III) salen catalysts immobilized on MCM-41 and delaminated zeolites ITQ-2 and ITQ-6 through new axial coordinating linkers  
AU Dominguez, Irene; Fornes, Vicente; Sabater, Maria J.  
CS Instituto de Tecnologia Quimica, Universidad Politecnica de Valencia, UPV-CSIC, Valencia, 46022, Spain  
SO Journal of Catalysis (2004), 228(1), 92-99  
CODEN: JCTLA5; ISSN: 0021-9517

PB Elsevier

DT Journal

LA English

OS CASREACT 142:55711

AB The authors report that the catalytic behavior and enantioselectivity of three different chiral Mn(III) salen complexes anchored to traditional supports such as MCM-41 (38-Å pore diameter) and delaminated zeolitic materials ITQ-2 and ITQ-6 strongly depend on whether the complexes are attached to the surfaces through the chiral equatorial tetradentate salen ligand or via the apical ligand. As for the case of unsupported complexes, this exptl. observation was accounted for strong variations in the conformational preference of the catalyst intermediate toward the approaching olefin, as well as to unfavorable structural changes in the complex. Control of the hydrophobicity of the surface allows for optimization of selectivity in obtaining chiral epoxides.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:123106 CAPLUS

DN 141:324459

TI Synthesis of mesoporous molecular sieves with secondary building units of Y zeolite by using surfactants in low concentration as template

AU Liu, Su; Kong, Ling-dong; He, A-di; Li, Quan-zhi

CS Department of Environmental Science and Engineering, Fudan University, Shanghai, 200433, Peop. Rep. China

SO Fudan Xuebao, Ziran Kexueban (2003), 42(6), 1003-1006

CODEN: FHPTAY; ISSN: 0427-7104

PB Fudan Daxue Chubanshe

DT Journal

LA Chinese

AB Mesoporous aluminosilicates with the structure of MCM-41 have been synthesized in alkaline situation, by using the mixture of cationic and anionic surfactants in very low concentration ( $x_{\text{surf}}/x_{\text{SiO}_2} = 0.07$ ) as template and the get containing secondary building units of Y zeolite as precursors. XRD, FT-IR and N<sub>2</sub> adsorption and desorption isotherms prove that this material has ordered hexagonal structure with Y zeolite secondary unit in its pore walls, which are thicker than the walls of MCM-41 materials synthesized by normal hydrothermal ways. SEM image shows a very unusual net-like morphol. of the material, different from the common loose shape of MCM-41. After being treated in 100% water vapor at 600° for 10 h, the structure of mesopore can still be sustained, showing high hydrothermal stability.

L7 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:44784 CAPLUS

DN 136:237362

TI Controlled Solubilization of Toluene by Silicate-Catanionic Surfactant Mesophases as Studied by in Situ and ex Situ XRD

AU Lind, Anna; Andersson, Jenny; Karlsson, Stefan; Aagren, Patrik; Bussian, Patrick; Amenitsch, Heinz; Linden, Mika

CS Department of Physical Chemistry, Aabo Akademi University, Turku, FIN-20500, Finland

SO Langmuir (2002), 18(4), 1380-1385

CODEN: LANGD5; ISSN: 0743-7463

PB American Chemical Society

DT Journal

LA English

AB Mesoscopically ordered silicate-surfactant composite materials of the M41S type synthesized in the presence of a swollen agent were characterized by in situ and ex situ x-ray diffraction anal. The key feature of the room-temperature synthesis is the use of a mixture of cationic and anionic surfactants as structure-directing agents. The lower interfacial charge d. of the mixed surfactant aggregates stabilizes structures of

lower interfacial curvature and therefore facilitates a more controlled solubilization of organic swelling agents. An increased solubilization capacity of the catanionic surfactant-silicate mesophase was observed close to an anionic/cationic surfactant ratio corresponding to a transition to the lamellar phase in the absence of toluene. In the presence of toluene, the catanionic template stabilizes microemulsion droplets that serve as building blocks for the final material. However, a fair amount of organic compound is solubilized in the SiO<sub>2</sub>-catanionic surfactant composite after the mesophase is formed. Although the present communication concerns mesoporous SiO<sub>2</sub>, the concept is a general one and may give nonsiliceous large-pore materials.

RE.CNT 34      THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
                 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s mesoporous silica  
      15846 MESOPOROUS  
      528571 SILICA  
      4020 SILICAS  
      528998 SILICA  
          (SILICA OR SILICAS)  
L8       4517 MESOPOROUS SILICA  
          (MESOPOROUS(W) SILICA)

=> s MCM-41  
      10526 MCM  
      285 MCMS  
      10635 MCM  
          (MCM OR MCMS)  
      241820 41  
L9       5748 MCM-41  
          (MCM(W) 41)

=> s L9 and L8  
L10       957 L9 AND L8

=> s process  
      2392365 PROCESS  
      1626581 PROCESSES  
L11       3570567 PROCESS  
          (PROCESS OR PROCESSES)

=> s L9 and L11  
L12       1522 L9 AND L11

=> s anionic surfactant  
      119969 ANIONIC  
      259 ANIONICS  
      120072 ANIONIC  
          (ANIONIC OR ANIONICS)  
      189081 SURFACTANT  
      169428 SURFACTANTS  
      240370 SURFACTANT  
          (SURFACTANT OR SURFACTANTS)  
L13       20975 ANIONIC SURFACTANT  
          (ANIONIC(W) SURFACTANT)

=> s L12 and L13  
L14       1 L12 AND L13

=> s basic silane  
      396154 BASIC  
      3215 BASICS  
      399019 BASIC  
          (BASIC OR BASICS)



86490 SILANE  
 33354 SILANES  
 100486 SILANE  
 (SILANE OR SILANES)  
 L15 13 BASIC SILANE  
 (BASIC(W) SILANE)

=> s L12 and L15  
 L16 0 L12 AND L15

=> s silicate monomer  
 194501 SILICATE  
 63951 SILICATES  
 223364 SILICATE  
 (SILICATE OR SILICATES)  
 192326 MONOMER  
 154804 MONOMERS  
 299813 MONOMER  
 (MONOMER OR MONOMERS)  
 L17 43 SILICATE MONOMER  
 (SILICATE(W) MONOMER)

=> s L8 and L17  
 L18 3 L8 AND L17

=> d L18 1-3 bib abs

L18 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2007:198261 CAPLUS  
 TI Mesoporous silica and method for the production  
 IN Takahashi, Shun; Sakamoto, Kazutami; Hiwatari, Kouzou  
 PA Shiseido Co., Ltd., Japan  
 SO PCT Int. Appl., 37pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007020894	A1	20070222	WO 2006-JP315949	20060811
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM JP 2007045692 A 20070222 JP 2005-234777 20050812 PRAI JP 2005-234777 A 20050812 JP 2005-344421 A 20051129				

AB The method is performed under electrolyte-free conditions by using a surfactant aggregate structure as a template to produce mesoporous silica having a novel geometrical structure. The mesoporous silica is produced under electrolyte-free conditions by reacting a nonionic surfactant with a water-soluble silicate monomer having a specific structure under neutral conditions. A sheet-like mesoporous silica is produced by using a nonionic surfactant forming a ribbon phase or nematic phase at appropriate temperature ranges and concentration ranges when dissolved in

water.

RE.CNT 9      THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:1129083 CAPLUS  
DN 143:393066  
TI Oral adsorbents for the treatment of high-phosphorous blood disease  
IN Imada, Tomoyuki; Sakamoto, Kazutami; Tatsumi, Takashi; Matsutani, Naomi;  
Takayanagi, Hiroshi  
PA Ajinomoto Co., Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005289853	A	20051020	JP 2004-105257	20040331
PRAI	JP 2004-105257		20040331		
AB	Mesoporous silica is orally administered to adsorb phosphoric acid for the treatment of high-phosphorous blood disease. The mesoporous silica is produced from an anionic surfactant, a silicate monomer, and a basic silane.				

L18 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:1054452 CAPLUS  
DN 142:40845  
TI method to produce mesoporous silica  
IN Tatsumi, Takashi; Yoshitake, Hideaki; Yokoi, Toshiyuki; Che, Shu-nai;  
Sakamoto, Kazutami  
PA Ajinomoto Co., Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004345895	A	20041209	JP 2003-144187	20030521
	US 2004267038	A1	20041230	US 2003-716427	20031120
PRAI	JP 2003-144187	A	20030521		
AB	The mesoporous SiO <sub>2</sub> is produced by mixing an anionic surfactant, a silicate monomer, and a basic silane having a general formula of (R <sub>1</sub> O) <sub>3</sub> Si-X-NR <sub>2</sub> R <sub>3</sub> , where R <sub>1</sub> -3 are linear- or branched-chain alkyl or H, and X is linear- or branched-chain alkylene. The method synthesizes mesoporous SiO <sub>2</sub> having high structural order utilizing the anionic surfactant micelles.				

=> s mesoporous silica  
15846 MESOPOROUS  
528571 SILICA  
4020 SILICAS  
528998 SILICA  
(SILICA OR SILICAS)  
L19 4517 MESOPOROUS SILICA  
(MESOPOROUS(W) SILICA)

=> s anionic surfactant  
119969 ANIONIC  
259 ANIONICS  
120072 ANIONIC  
(ANIONIC OR ANIONICS)  
189081 SURFACTANT

169428 SURFACTANTS  
240370 SURFACTANT  
(SURFACTANT OR SURFACTANTS)  
L20 20975 ANIONIC SURFACTANT  
(ANIONIC(W) SURFACTANT)

=> s L19 and L20  
L21 26 L19 AND L20

=> s process  
2392365 PROCESS  
1626581 PROCESSES  
L22 3570567 PROCESS  
(PROCESS OR PROCESSES)  
75% OF LIMIT FOR TOTAL ANSWERS REACHED

=> s L22 and L19  
L23 1530 L22 AND L19

=> s L23 and L20  
L24 2 L23 AND L20

=> d L24 1-2 bib abs

L24 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:1107834 CAPLUS  
DN 146:69400  
TI Hierarchically helical mesostructured silica nanofibers templated by  
achiral cationic surfactant  
AU Wang, Jingui; Wang, Wenqiu; Sun, Pingchuan; Yuan, Zhongyong; Li, Baohui;  
Jin, Qinghua; Ding, Datong; Chen, Tiehong  
CS Department of Materials Chemistry, College of Chemistry, Key Laboratory of  
Functional Polymer Materials of MOE, Nankai Univ., Tianjin, 300071, Peop.  
Rep. China  
SO Journal of Materials Chemistry (2006), 16(42), 4117-4122  
CODEN: JMACEP; ISSN: 0959-9428  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB Recently, ordered chiral mesoporous silica with a  
twisted hexagonal rod-like morphol. and hexagonally ordered chiral  
channels has been synthesized by using chiral anionic  
surfactants as a liquid crystal template (S. Che, Z. Liu, T. Ohsuna,  
K. Sakamoto, O. Terasaki and T. Tatsumi, Nature, 2004, 429, 281). In this  
work, we report an observation of hierarchically helical  
mesoporous silica nanofibers organized by the achiral  
cationic surfactant cetyltrimethylammonium bromide (CTAB). These  
nanofibers (diameter ranging around 100-300 nm) grew from a two-phase system  
(H2O, CTAB, HCl for the aqueous phase and tetraethylsiloxane (TEOS) in hexane  
for the oil phase). SEM and TEM characterizations were performed and the  
results indicate that these nanofibers possess rope-like twisted hexagonal  
morphol. and helical (chiral) mesoporous channels running inside winding  
around the fiber axis. These twisted hexagonal nanofibers could further  
curve spirally to form a second-level helical morphol. (hierarchically  
helical morphol.). As no chiral mols. are used in the synthesis, the  
hierarchically helical morphol. of nanofibers could be explained by the  
different kinds of topol. defects existing in the silicate liquid crystal  
seeds formed in a diffusion-controlled kinetic process, and  
these defects could initiate and direct the growth of particular forms of  
mesostructured silica. Formation of the ordered chiral mesoporous  
silica would be expected to be a general phenomenon in the  
cooperative assembly between amphiphilic organic mols. (templates) and inorg.  
species, no matter whether the templates are chiral or achiral.  
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:411727 CAPLUS  
 DN 143:104143  
 TI Nonionic Block Copolymer and Anionic Mixed Surfactants Directed Synthesis  
 of Highly Ordered Mesoporous Silica with Bicontinuous  
 Cubic Structure  
 AU Chen, Dehong; Li, Zheng; Yu, Chengzhong; Shi, Yifeng; Zhang, Zhendong; Tu,  
 Bo; Zhao, Dongyuan  
 CS Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis  
 and Innovative Materials, Fudan University, Shanghai, 200433, Peop. Rep.  
 China  
 SO Chemistry of Materials (2005), 17(12), 3228-3234  
 CODEN: CMATEX; ISSN: 0897-4756  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB Mesoporous silica with Ia.hivin.3d structure has been  
 successfully prepared by using mixed surfactants of com. available nonionic  
 block copolymer P123 (EO20PO70EO20) and anionic sodium dodecyl sulfate  
 (SDS) as structure-directing agents through an acid-catalyzed silica  
 sol-gel process. XRD, TEM, and N2 sorption measurements show  
 that the products have highly ordered bicontinuous cubic mesostructure  
 with high surface area (.apprx.770 m2/g), large pore volume (.apprx.1.5  
 cm3/g), and uniform pore size (.apprx.10 nm). Effects of preparation  
 parameters on the formation of the mesostructure have been extensively  
 investigated. It is found that the molar ratios of SDS/P123 between 2.1  
 and 2.5 and that of silicic species to P123 in the range from 40 to 75 are  
 favorable for the formation of highly ordered Ia.hivin.3d mesostructure.  
 Prolonging hydrothermal treatment time leads to almost unchanged cell  
 parameters of the products, whereas there is obvious increase of the pore  
 sizes and pore volume The results show that resultant template-free  
 mesoporous silica products have excellent thermal  
 stability, and they are more stable in N2 atmosphere than in air.  
 Morphologies of the resultant materials can be further controlled by  
 adding inorg. salt (such as Na2SO4) into the mixed surfactants system.  
 Coral- and petaline-like mesoporous silica with  
 continuous skeletons can be obtained. Understanding this synthesis system  
 might be useful for economical and large-scale production of mesoporous  
 materials with controllable structures.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s anionic surfactant  
 119969 ANIONIC  
 259 ANIONICS  
 120072 ANIONIC  
 (ANIONIC OR ANIONICS)  
 189081 SURFACTANT  
 169428 SURFACTANTS  
 240370 SURFACTANT  
 (SURFACTANT OR SURFACTANTS)

L25 20975 ANIONIC SURFACTANT  
 (ANIONIC(W)SURFACTANT)

=> s silicate monomer  
 194501 SILICATE  
 63951 SILICATES  
 223364 SILICATE  
 (SILICATE OR SILICATES)  
 192326 MONOMER  
 154804 MONOMERS  
 299813 MONOMER  
 (MONOMER OR MONOMERS)

L26 43 SILICATE MONOMER  
(SILICATE(W)MONOMER)

=> s basic silane  
396154 BASIC  
3215 BASICS  
399019 BASIC  
(BASIC OR BASICS)  
86490 SILANE  
33354 SILANES  
100486 SILANE  
(SILANE OR SILANES)

L27 13 BASIC SILANE  
(BASIC(W)SILANE)

=> s L25 and L26  
L28 2 L25 AND L26

=> s :25 amd L27  
MISSING OPERATOR AMD L27  
The search profile that was entered contains terms or  
nested terms that are not separated by a logical operator.

=> s L25 and L27  
L29 2 L25 AND L27

=> s mesoporous silica and L26  
15846 MESOPOROUS  
528571 SILICA  
4020 SILICAS  
528998 SILICA  
(SILICA OR SILICAS)  
4517 MESOPOROUS SILICA  
(MESOPOROUS(W)SILICA)

L30 3 MESOPOROUS SILICA AND L26

=> d L30 1-3 bib abs

L30 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2007:198261 CAPLUS  
TI Mesoporous silica and method for the production  
IN Takahashi, Shun; Sakamoto, Kazutami; Hiwatari, Kouzou  
PA Shiseido Co., Ltd., Japan  
SO PCT Int. Appl., 37pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2007020894	A1	20070222	WO 2006-JP315949	20060811
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	JP 2007045692	A	20070222	JP 2005-234777	20050812
PRAI	JP 2005-234777	A	20050812		

JP 2005-344421 A 20051129

AB The method is performed under electrolyte-free conditions by using a surfactant aggregate structure as a template to produce mesoporous silica having a novel geometrical structure. The mesoporous silica is produced under electrolyte-free conditions by reacting a nonionic surfactant with a water-soluble silicate monomer having a specific structure under neutral conditions. A sheet-like mesoporous silica is produced by using a nonionic surfactant forming a ribbon phase or nematic phase at appropriate temperature ranges and concentration ranges when dissolved in water.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:1129083 CAPLUS

DN 143:393066

TI Oral adsorbents for the treatment of high-phosphorous blood disease

IN Imada, Tomoyuki; Sakamoto, Kazutami; Tatsumi, Takashi; Matsutani, Naomi; Takayanagi, Hiroshi

PA Ajinomoto Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005289853	A	20051020	JP 2004-105257	20040331
PRAI	JP 2004-105257		20040331		

AB Mesoporous silica is orally administered to adsorb phosphoric acid for the treatment of high-phosphorous blood disease. The mesoporous silica is produced from an anionic surfactant, a silicate monomer, and a basic silane.

L30 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:1054452 CAPLUS

DN 142:40845

TI method to produce mesoporous silica

IN Tatsumi, Takashi; Yoshitake, Hideaki; Yokoi, Toshiyuki; Che, Shu-nai; Sakamoto, Kazutami

PA Ajinomoto Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004345895	A	20041209	JP 2003-144187	20030521
	US 2004267038	A1	20041230	US 2003-716427	20031120
PRAI	JP 2003-144187	A	20030521		

AB The mesoporous SiO<sub>2</sub> is produced by mixing an anionic surfactant, a silicate monomer, and a basic silane having a general formula of (R<sub>1</sub>O)<sub>3</sub>Si-X-NR<sub>2</sub>R<sub>3</sub>, where R<sub>1</sub>-3 are linear- or branched-chain alkyl or H, and X is linear- or branched-chain alkylene. The method synthesizes mesoporous SiO<sub>2</sub> having high structural order utilizing the anionic surfactant micelles.

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
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NEWS	6	NOV 10	CA/CAPLUS F-Term thesaurus enhanced
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NEWS	10	DEC 11	CAS REGISTRY chemical nomenclature enhanced
NEWS	11	DEC 14	WPIDS/WPINDEX/WPIX manual codes updated
NEWS	12	DEC 14	GBFULL and FRFULL enhanced with IPC 8 features and functionality
NEWS	13	DEC 18	CA/CAPLUS pre-1967 chemical substance index entries enhanced with preparation role
NEWS	14	DEC 18	CA/CAPLUS patent kind codes updated
NEWS	15	DEC 18	MARPAT to CA/CAPLUS accession number crossover limit increased to 50,000
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NEWS	17	DEC 27	CA/CAPLUS enhanced with more pre-1907 records
NEWS	18	JAN 08	CHEMLIST enhanced with New Zealand Inventory of Chemicals
NEWS	19	JAN 16	CA/CAPLUS Company Name Thesaurus enhanced and reloaded
NEWS	20	JAN 16	IPC version 2007.01 thesaurus available on STN
NEWS	21	JAN 16	WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data
NEWS	22	JAN 22	CA/CAPLUS updated with revised CAS roles
NEWS	23	JAN 22	CA/CAPLUS enhanced with patent applications from India
NEWS	24	JAN 29	PHAR reloaded with new search and display fields

NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in multiple databases

NEWS 26 FEB 13 CASREACT coverage to be extended

NEWS 27 Feb 15 PATDPASPC enhanced with Drug Approval numbers

NEWS 28 Feb 15 RUSSIAPAT enhanced with pre-1994 records

NEWS 29 Feb 23 KOREAPAT enhanced with IPC 8 features and functionality

NEWS 30 Feb 26 MEDLINE reloaded with enhancements

NEWS 31 Feb 26 EMBASE enhanced with Clinical Trial Number field

NEWS 32 Feb 26 TOXCENTER enhanced with reloaded MEDLINE

NEWS 33 Feb 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements

NEWS 34 Feb 26 CAS Registry Number crossover limit increased from 10,000 to 300,000 in multiple databases

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=> s mesoporous silica



15846 MESOPOROUS  
528571 SILICA  
4020 SILICAS  
528998 SILICA  
(SILICA OR SILICAS)  
L1 4517 MESOPOROUS SILICA  
(MESOPOROUS (W) SILICA)

=> s anionic surfactant  
119969 ANIONIC  
259 ANIONICS  
120072 ANIONIC  
(ANIONIC OR ANIONICS)  
189081 SURFACTANT  
169428 SURFACTANTS  
240370 SURFACTANT  
(SURFACTANT OR SURFACTANTS)  
L2 20975 ANIONIC SURFACTANT  
(ANIONIC (W) SURFACTANT)

=> s L1 and L2  
L3 26 L1 AND L2

=> d L3 1-26 bib abs

L3 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:1335049 CAPLUS  
TI Anionic surfactant templated mesoporous  
silica (AMS)  
AU Gao, Chuan-bo; Che, Shun-ai  
CS School of Chemistry and Chemical Technology, Shanghai Jiao Tong  
University, Shanghai, 200240, Peop. Rep. China  
SO Shiyou Xuebao, Shiyou Jiagong (2006), 22(Suppl.), 22-32  
CODEN: SXSHEY; ISSN: 1001-8719  
PB Shiyou Xuebao, Shiyou Jiagong Bianjibu  
DT Journal  
LA English  
AB Anionic surfactant templated mesoporous  
silicas (AMSs) were prepared by using anionic  
surfactant as the template and aminopropylsiloxane or quaternized  
aminopropylsiloxane as the co-structure directing agent (CSDA). Diverse  
mesophases were discovered, from AMS-1 to 10, including the structures of  
three dimensional (3d-) hexagonal, 3d-tetragonal, 3d-cubic, 2d-hexagonal,  
bicontinuous cubic and lamellar. This novel route to prepare mesoporous  
materials also leads to the formation of chiral mesoporous  
silica with helical mesopores running inside, by using chiral  
anionic surfactant as the template, and the helicity and  
morphol. can be simply controlled by the stirring rate during the  
synthesis. Mesoporous silicas, functionalized with  
amino and quaternary ammonium groups and with the various structures given  
above were obtained by extraction of surfactant. Finally, the formation  
mechanism of AMS was discussed from the view of the kinetics and  
energetics, resp.  
RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:1107834 CAPLUS  
DN 146:69400  
TI Hierarchically helical mesostructured silica nanofibers templated by  
achiral cationic surfactant  
AU Wang, Jingui; Wang, Wenqiu; Sun, Pingchuan; Yuan, Zhongyong; Li, Baohui;  
Jin, Qinghua; Ding, Datong; Chen, Tiehong  
CS Department of Materials Chemistry, College of Chemistry, Key Laboratory of  
Functional Polymer Materials of MOE, Nankai Univ., Tianjin, 300071, Peop.

Rep. China

SO Journal of Materials Chemistry (2006), 16(42), 4117-4122

CODEN: JMACEP; ISSN: 0959-9428

PB Royal Society of Chemistry

DT Journal

LA English

AB Recently, ordered chiral mesoporous silica with a twisted hexagonal rod-like morphol. and hexagonally ordered chiral channels has been synthesized by using chiral anionic surfactants as a liquid crystal template (S. Che, Z. Liu, T. Ohsuna, K. Sakamoto, O. Terasaki and T. Tatsumi, Nature, 2004, 429, 281). In this work, we report an observation of hierarchically helical mesoporous silica nanofibers organized by the achiral cationic surfactant cetyltrimethylammonium bromide (CTAB). These nanofibers (diameter ranging around 100-300 nm) grew from a two-phase system (H<sub>2</sub>O, CTAB, HCl for the aqueous phase and tetraethylsiloxane (TEOS) in hexane for the oil phase). SEM and TEM characterizations were performed and the results indicate that these nanofibers possess rope-like twisted hexagonal morphol. and helical (chiral) mesoporous channels running inside winding around the fiber axis. These twisted hexagonal nanofibers could further curve spirally to form a second-level helical morphol. (hierarchically helical morphol.). As no chiral mols. are used in the synthesis, the hierarchically helical morphol. of nanofibers could be explained by the different kinds of topol. defects existing in the silicate liquid crystal seeds formed in a diffusion-controlled kinetic process, and these defects could initiate and direct the growth of particular forms of mesostructured silica. Formation of the ordered chiral mesoporous silica would be expected to be a general phenomenon in the cooperative assembly between amphiphilic organic mols. (templates) and inorg. species, no matter whether the templates are chiral or achiral.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:787482 CAPLUS

DN 145:213667

TI Meso-porous silica and its manufacture

IN Ogura, Takashi; Abe, Masahiko; Sakai, Hideki; Okubo, Takahiro

PA Tsubone, Kazuyuki, Japan; Takebayashi, Takashi

SO Jpn. Kokai Tokkyo Koho, 10pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006206419	A	20060810	JP 2005-49671	20050128
PRAI	JP 2005-49671		20050128		

AB The title silica is derived from a silica source and a mixed aqueous solution of  
a cationic surfactant and an organic template as an anionic surfactant; and is manufactured by mixing the silica source and the mixed aqueous solution in a water mixed solvent to have evenly sized meso-pores.

L3 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:675781 CAPLUS

DN 145:300333

TI Formation Mechanism of Anionic Surfactant-Templated Mesoporous Silica

AU Gao, Chuanbo; Qiu, Huibin; Zeng, Wei; Sakamoto, Yasuhiro; Terasaki, Osamu; Sakamoto, Kazutami; Chen, Qun; Che, Shunai

CS School of Chemistry and Chemical Technology, State Key Laboratory of Composite Materials, Shanghai Jiao Tong University, Shanghai, 200240, Peop. Rep. China

SO Chemistry of Materials (2006), 18(16), 3904-3914  
CODEN: CMATEX; ISSN: 0897-4756  
PB American Chemical Society  
DT Journal  
LA English  
AB The synthesis mechanism of anionic surfactant  
-templated mesoporous silica (AMS) is described. A  
family of highly ordered mesoporous silica structures  
have been synthesized via an approach based on the self-assembly of  
anionic surfactants and inorg. precursors by using  
aminopropylsiloxane or quaternized aminopropylsiloxane as the  
co-structure-directing agent (CSDA), which is a different route from  
previous pathways. Mesophases with differing surface curvatures, varying  
from cage type (tetragonal P42/mnm; cubic Pm.hivin.3n with modulations;  
cubic Fd.hivin.3m) to cylindrical (two-dimensional hexagonal p6mm),  
bicontinuous (cubic Ia.hivin.3d and Pn.hivin.3m), and lamellar have been  
obtained by controlling the charge d. of the micelle surfaces by varying  
the degree of ionization of the carboxylate surfactants. Changing the  
degree of ionization of the surfactant results in changes of the  
surfactant packing parameter g, which leads to different mesostructures.  
Furthermore, variation of the charge d. of pos. charged amino groups of  
the CSDA also gives rise to different values of g. Mesoporous  
silicas, functionalized with amino and quaternary ammonium groups  
and with the various structures given above, have been obtained by extraction  
of the surfactant. This report leads to a deeper understanding of the  
interactions between the surfactant anions and the CSDA and provides a  
feasible and facile approach to the mesophase design of AMS materials.  
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:651954 CAPLUS  
DN 145:279030  
TI Synthesis and characterization of mesoporous silica  
AMS-10 with bicontinuous cubic Pn.hivin.3m symmetry  
AU Gao, Chuanbo; Sakamoto, Yasuhiro; Sakamoto, Kazutami; Terasaki, Osamu;  
Che, Shunai  
CS School of Chemistry and Chemical Technology, State Key Laboratory of  
Composite materials, Shanghai Jiao Tong University, Shanghai, 200240,  
Peop. Rep. China  
SO Angewandte Chemie, International Edition (2006), 45(26), 4295-4298  
CODEN: ACIEF5; ISSN: 1433-7851  
PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English  
AB By precisely controlling the neutralization degree of the anionic  
surfactant template, mesoporous silica with  
different structures was prepared, such as AMS-10. Detailed  
characterizations of AMS-10 show that it is a novel bicontinuous cubic  
Pn.hivin.3m mesophase. The mesostructure is composed of an interwoven  
enantiomeric pair of 3D networks.  
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:403914 CAPLUS  
DN 146:91990  
TI Synthesis of mesoporous silica with spiral morphology  
by using chiral anionic surfactant  
AU Qu, Feng-Yu; Zhu, Guang-Shan; Lin, Hui-Ming; Zhang, Wei-Wei; Li, Shou-Gui;  
Qiu, Shi-Lun  
CS State Key Lab. Inorg. Synthesis and Preparative Chem., Jilin Univ.,  
Changchun, 130023, Peop. Rep. China  
SO Gaodeng Xuexiao Huaxue Xuebao (2006), 27(4), 602-604  
CODEN: KTHPDM; ISSN: 0251-0790

PB Gaodeng Jiaoyu Chubanshe  
 DT Journal  
 LA Chinese  
 AB Anionic chiral template Ibuprofen and co-template 3-Aminopropyltriethoxysilane were employed to synthesize mesoporous SiO<sub>2</sub> with spiral morphol., and the sample was characterized by using XRD, FTIR, SEM and TEM methods, conforming its hexagonal mesoporous structure and spiral morphol.

L3 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2006:331475 CAPLUS  
 DN 145:51511  
 TI Anionic surfactant induced mesophase transformation to synthesize highly ordered large-pore mesoporous silica structures  
 AU Chen, Dehong; Li, Zheng; Wan, Ying; Tu, Xingjun; Shi, Yifeng; Chen, Zhenxia; Shen, Wei; Yu, Chengzhong; Tu, Bo; Zhao, Dongyuan  
 CS Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Fudan University, Shanghai, 200433, Peop. Rep. China  
 SO Journal of Materials Chemistry (2006), 16(16), 1511-1519  
 CODEN: JMACEP; ISSN: 0959-9428  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 AB Successive mesophase transformation induced by an anionic surfactant such as sodium dioctyl sulfosuccinate (AOT) has been demonstrated to fabricate four kinds of large pore mesoporous silica materials in a triblock copolymer F127 surfactant assembly system. The transformation of the highly ordered mesostructures from face-centered cubic (space group Fm3m) to body-centered Im3m then towards two-dimensional (2-D) hexagonal p6m and eventually to cubic bicontinuous Ia3d symmetries has been achieved by tuning the amount of AOT and 1,3,5-trimethylbenzene (TMB). Characterization by small-angle X-ray scattering (SAXS), powder X-ray diffraction (XRD), transmission electron microscopy (TEM) and N<sub>2</sub> sorption isotherms reveals that all mesoporous silica structures have highly ordered regularity in large domains and possess high surface areas, large pore vols. and uniform pore sizes. The expansion of hydrophobic volume in the amphiphilic Pluronic F127 surfactant associated with AOT and TMB mols. in an acidic media is attributed to the observed mesophase transformation. A further swelling of the surfactant micelles can be achieved by adding TMB mols. into the mixed AOT and F127 surfactants system due to their synergistic solubility enhancement, which gives rise to a long-range ordered 2-D hexagonal mesoporous silica structure with very large cell parameter (a = 16.5 nm) and pore size (.apprx.12 nm). The understanding of the blend-surfactant assembly mechanism will lead to a more rational approach for economical and large-scale production of mesoporous materials with controllable structures.

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2006:287292 CAPLUS  
 DN 145:496118  
 TI Synthesis of amino-functionalized mesoporous silica -zirconia mixed oxide using sodium silicate and zirconium carbonate complex  
 AU Tarafdar, A.; Pramanik, P.  
 CS Department of Chemistry, Indian Institute of Technology Kharagpur, Kharagpur, 721 302, India  
 SO Microporous and Mesoporous Materials (2006), 91(1-3), 221-224  
 CODEN: MIMMFJ; ISSN: 1387-1811  
 PB Elsevier B.V.  
 DT Journal

LA English  
AB Amino-functionalized mesostructured SiO<sub>2</sub>-zirconia mixed oxide was synthesized through a very convenient one step synthesis route using H<sub>2</sub>O soluble Na silicate, Zr(IV) carbonate complex and 3-aminopropyltriethoxysilane in the presence of anionic surfactant Na dodecyl sulfate under basic condition, exhibiting excellent adsorption properties towards arsenate ions. Moderately high surface area was achieved using Si/Zr ratio 2.06 and 10 mol% 3-aminopropyltriethoxysilane with respect to the amount of SiO<sub>2</sub>. The presence of mixed oxide framework is clearly visible from the peak shift of Si-O-Si stretching frequency in FTIR spectra. The SBET and pore volume of the composite is 420 m<sup>2</sup> g<sup>-1</sup> and 0.4396 mL g<sup>-1</sup> resp. with uniform and narrow pore size distribution centered at 42.8 Å. The mesoporous composite showed good absorption properties towards arsenate anion and anionic dye mols.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:225036 CAPLUS  
DN 144:457090  
TI Amino-functionalized mesoporous silica synthesized by an anionic surfactant templating route  
AU Yokoi, Toshiyuki; Yoshitake, Hideaki; Yamada, Takashi; Kubota, Yoshihiro; Tatsumi, Takashi  
CS Department of Chemical System Engineering, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan  
SO Journal of Materials Chemistry (2006), 16(12), 1125-1135  
CODEN: JMACEP; ISSN: 0959-9428  
PB Royal Society of Chemistry  
DT Journal  
LA English  
AB A "S-N+.apprx.I- pathway" (S-: anionic surfactant, N+: cationic amino group and I: inorg. species) for the synthesis of mesoporous silica has been developed by using 3-aminopropyltriethoxysilane (APS) as a co-structure directing agent (CSDA), which can interact with the anionic head group in the surfactant (SDA). Thus synthesized mesoporous silica has been designated as AMS (Anionic-surfactant-templated Mesoporous Silica). Removal of the anionic surfactant by extraction led to the functionalized AMS containing amino groups on the silica surface. Amino-functionalized AMS using 3-aminopropyltriethoxysilane (APS) and lauric acid sodium salt (LAS) as CSDA and SDA, resp., was synthesized with varying proportions of APS in the silica sources (x-APS-AMS, where x is the proportion of APS in the silica sources, x = 0.1-0.6). In 0.4-APS-AMS, the content of amino groups derived from APS estimated by CHN elemental anal. and the argentometric titration was 2.36 and 2.24 mmol g<sup>-1</sup>, resp., suggesting that almost all the aminopropyl moieties were on the surfaces in contrast to the MCM-41 type materials synthesized with a cationic surfactant. Thus obtained amino-functionalized AMS via the anionic surfactant templating route shows a higher adsorption capacity for Co<sup>2+</sup> cations than amino-functionalized MCM-41 prepared by the direct co-condensation method via a conventional cationic templating route. There was also a marked difference in the activity for the Knoevenagel reaction between amino-functionalized AMS and MCM-41, indicating a significant difference in the state of aminopropyl moieties exposed to the surfaces.

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:3406 CAPLUS  
DN 145:196528  
TI Highly efficient synthesis of ordered mesoporous silica

materials with controllable microporosity using surfactant mixtures as templates

AU Li, Defeng; Guan, Xiangyu; Song, Jiangwei; Di, Yan; Zhang, Daliang; Ge, Xin; Zhao, Lan; Xiao, Feng-Shou  
CS Department of Chemistry & State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun, 130023, Peop. Rep. China

SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (2006), 272(3), 194-202

CODEN: CPEAEH; ISSN: 0927-7757

PB Elsevier B.V.

DT Journal

LA English

AB Ordered mesoporous SiO<sub>2</sub> materials (SBA-family) with 2-dimensional hexagonal (p6mm) and 3-dimensional cubic (Im3m) symmetry were efficiently synthesized by using the mixture of triblock copolymer surfactant and Na dodecylsulfonate as co-templates at relatively low concentration. XRD, TEM, and nitrogen adsorption/desorption isotherms are used to characterize these mesoporous SiO<sub>2</sub> materials, and the mesoporous SiO<sub>2</sub> materials synthesized from the mixed surfactants have better mesostructural order and smaller mesopore size, compared with mesoporous SiO<sub>2</sub> materials of SBA-15 and SBA-16. Also, the microporosity in these ordered mesoporous materials is well controlled by the weight ratios of polymer surfactant to anionic surfactant. Particularly, when P123 concentration in the starting gel is reduced to <0.4%, the walls of ordered hexagonal mesoporous SiO<sub>2</sub> are micropore-free.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:1334060 CAPLUS

DN 144:240821

TI Racemic Helical Mesoporous Silica Formation by Achiral Anionic Surfactant

AU Wu, Xiaowei; Jin, Haiying; Liu, Zheng; Ohsuna, Tetsu; Terasaki, Osamu; Sakamoto, Kazutami; Che, Shunai

CS Department of Chemistry, School of Chemistry and Chemical Technology, Shanghai Jiao Tong University, Shanghai, 200240, Peop. Rep. China

SO Chemistry of Materials (2006), 18(2), 241-243

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

AB We here report that achiral surfactant sodium dodecyl sulfate can form ordered racemic helical mesoporous silica by its self-assembly in the presence of N-trimethoxy-silylpropyl-N,N,N-trimethylammonium chloride.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:1245482 CAPLUS

DN 144:475749

TI New approach for the control of size and surface characteristics of mesoporous silica particles by using mixed surfactants in W/O emulsion

AU Lee, Yong-Geun; Oh, Chul; Yoo, Sang-Ki; Koo, Sang-Man; Oh, Seong-Geun

CS Department of Chemical Engineering, Center for Ultramicrochemical Process System (CUPS), Hanyang University, Seoul, 133-791, S. Korea

SO Microporous and Mesoporous Materials (2005), 86(1-3), 134-144

CODEN: MIMMFJ; ISSN: 1387-1811

PB Elsevier B.V.

DT Journal

LA English

AB Mesoporous SiO<sub>2</sub> micro-spheres were prepared using an emulsion-gel method in

W/O emulsion consisting of aqueous solution of SDS or Tween 20 and n-octanol of hydroxypropyl cellulose (HPC) and Span 80. The morphol. of H2O droplets in W/O emulsion was controlled by the concentration of the H2O-soluble surfactants

of SDS and Tween 20 and the oil-soluble surfactant of Span 80. Since H2O droplets serve as a supporting structure for particle growth and aggregation, their morphol. influences the shape, size, and size distribution of particles. When 3% and 5% of Span 80 were employed in system, the effect of surfactant on the particle size distribution was more prominent than when 7% was used. Anionic surfactants were hardly used in aqueous phase to make mesoporous SiO2 particles and one or more H2O-soluble surfactants were only used in aqueous phase

to control the shape of particles. The particles of mesophase structure were synthesized when the anionic surfactant, SDS, was added to the H2O phase and the nonionic surfactant, Span 80, was employed in the oil phase. As the concentration of SDS and Tween 20 increases, the pore size of samples is altered from 7.2 nm up to 44.4 nm. This change of surface morphol. occurred due to the solubilization ability of H2O-soluble surfactants. Also, depending on whether the anionic surfactant or nonionic surfactant is used, the degree of the change in pore size distribution of SiO2 particles is relatively different. When SDS is used, the maximum peaks of the pore size distribution are located on the right rather than those in SiO2 particles prepared using Tween 20. The structure of these materials was characterized by optical microscope, field-emission SEM, and nitrogen adsorption and desorption (BET isotherms and BJH pore size distribution measurements).

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:1230733 CAPLUS  
DN 144:194671  
TI Synthesis of chiral mesoporous silica  
IN Che, Shunai; Chen, Sijing; Sakamoto, Kazutami  
PA Shanghai Jiao Tong University, Peop. Rep. China  
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 12 pp.  
CODEN: CNXXEV

DT Patent  
LA Chinese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	CN 1569632	A	20050126	CN 2004-10018020	20040429
PRAI	CN 2004-10018020		20040429		

AB This invention discloses a chiral mesoporous silica and the synthetic method. Synthesis of the chiral mesoporous silica includes the following steps: dissolving chiral anionic surfactant, N-acyl-L-alanine or its salt, adding base or inorg. acid solution to form micelles as structure-directing materials, adding aminosilane or quaternized aminosilane as co-structure-directing agent, adding silane and allowing them to react at 0-100 ÅC for 1-4 days, and centrifugating or filtering, rinsing, drying, and baking to obtain chiral mesoporous silica. The mesoporous silica has two-dimensional hexagonal p6 mm structure and has orderly helical channels with different curvatures around the center of the hexagonal rod. The material has good application prospect in biochem., medicinal chemical, electronics, and macromol. material.

L3 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:1160575 CAPLUS  
DN 145:125078  
TI Studies of anionic surfactant templated mesoporous structures by electron microscopy

AU Garcia-Bennett, Alfonso E.; Che, Shunai; Miyasaka, Keiichi; Sakamoto, Yasuhiro; Ohsuna, Tetsu; Liu, Zheng; Terasaki, Osamu  
 CS Structural Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, S-10691, Swed.  
 SO Studies in Surface Science and Catalysis (2005), 156 (Nanoporous Materials IV), 11-18  
 CODEN: SSCTDM; ISSN: 0167-2991  
 PB Elsevier B.V.  
 DT Journal; General Review  
 LA English  
 AB A review. Using anionic surfactants and co-structure directing agents, Che et al., recently reported a novel synthesis approach for mesoporous SiO<sub>2</sub> crystals. This method gave rise to a new family of mesoporous materials. Termed anionic surfactant templated mesoporous solids (AMS-n), the structural diversity encountered surpasses conventional cationic and polymeric templated mesoporous materials. Several novel structure types have already been prepared and were resolved using electron crystallog. to derive their porous connectivity. Further synthetic and structural studies conducted on these and related materials reveal the large potential of this preparation method to tailor porous and structural details such as cage size, cage connectivity, and defect concentration. More complex structures can easily be imagined and are being realized. Also, these materials offer an excellent playground for the advancement of anal. tools dedicated to the study of porous solids. Within these, electron microscopy (EM) and electron crystallog. (EC) based methods are emerging as the main tool with the capabilities to elucidate all of the necessary details, whether structural or porous to derive fundamental properties of these solids. Here the authors offer a short review of the exciting structural characteristics found in AMS-n and related samples.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:1129083 CAPLUS  
 DN 143:393066  
 TI Oral adsorbents for the treatment of high-phosphorous blood disease  
 IN Imada, Tomoyuki; Sakamoto, Kazutami; Tatsumi, Takashi; Matsutani, Naomi; Takayanagi, Hiroshi  
 PA Ajinomoto Co., Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005289853	A	20051020	JP 2004-105257	20040331
JP 2004-105257		20040331		

AB Mesoporous silica is orally administered to adsorb phosphoric acid for the treatment of high-phosphorous blood disease. The mesoporous silica is produced from an anionic surfactant, a silicate monomer, and a basic silane.

L3 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:1094653 CAPLUS  
 DN 143:442870  
 TI Synthesis of anionic surfactant templated mesoporous silica (AMS)  
 AU Yokoi, Toshiyuki; Tatsumi, Takashi  
 CS Dep. Chem. System Eng., Univ. Tokyo, Tokyo, 113-8656, Japan  
 SO Zeoraito (2005), 22(3), 57-67  
 CODEN: ZEOREM; ISSN: 0918-7774  
 PB Zeoraito Gakkai



DT Journal; General Review  
 LA Japanese  
 AB A review. The first synthesis of the anionic surfactant templated mesoporous silica (AMS) was achieved. The use of anionic surfactant as a structure-directing agent (SDA) for the formation of the mesostructured silica-micelle composite has been designated as the "S-N+-I-pathway" (S- = anionic surfactant, N+ = cationic functional group, I- = inorg. species) that is promoted by utilization of an organoalkoxysilane containing an amino group such as 3-aminopropyltriethoxysilane (APS) as N+. Since the dissociation constant pKa of the amino group in the conjugate acid of APS is about 10.6 at 298 K, considerable number of amino groups is protonated and so can interact with the anionic surfactant head group, if pH is below about 10. In this case, APS works as a part of SDA. Therefore, we named APS "co-structure directing agent (CSDA)". Recently, we succeeded in synthesizing chiral mesoporous materials by using N-acyl-L-alanine sodium salt as a chiral anionic surfactant with an aminosilane or a quaternized aminosilane as a co-structure-directing agent. The materials show a twisted hexagonal rod-like morphol. with a diameter of 130-180 nm and a length of 1-6  $\mu$ m. They have one-dimensional chiral channels with a diameter of 2.2 nm and a 2d-hexagonal lattice parameter of 4.4 nm; the existence of a chiral channel in the materials was confirmed by transmission electron microscopy (TEM). The macroscopic morphol. of chiral mesoporous materials was very sensitive to the synthetic parameters, e.g. temperature and agitation period. Elucidation of the formation mechanism of chiral mesoporous silica as well as the control of macroscopic morphol. and handedness of the helix are underway.

L3 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:845166 CAPLUS  
 DN 143:338321  
 TI Mesoporous materials having chiral channel  
 AU Tatsumi, Takashi; Yokoi, Toshiyuki  
 CS Resour. Chem. Res. Lab., Tokyo Inst. Technol., Yokohama, 226-8503, Japan  
 SO Kagaku to Kogyo (Tokyo, Japan) (2005), 58(8), 944-946  
 CODEN: KAKTAF; ISSN: 0022-7684  
 PB Nippon Kagakkai

DT Journal; General Review  
 LA Japanese  
 AB A review, on the success in synthesis of mesoporous silica with spiral chiral channels by using amino acid-type anionic surfactants as templates and amino- or quaternary ammonium group-containing silylating agents. Through TEM images, reflection of the local chirality of the surfactants not only on mesopore structure but also on morphol. can be seen.

L3 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:420792 CAPLUS  
 DN 144:393756  
 TI Quiescent non-ionic surfactant assembly of mesoporous materials under basic conditions  
 AU Wang, Y. M.; Zhu, J. H.  
 CS Department of Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China  
 SO Studies in Surface Science and Catalysis (2004), 154A(Recent Advances in the Science and Technology of Zeolites and Related Materials), 533-540  
 CODEN: SSCTDM; ISSN: 0167-2991

PB Elsevier B.V.  
 DT Journal  
 LA English  
 AB For the first time a polymer organized mesoporous silica material with the thick walls and the pores on the border between the micropore and mesopore region is prepared under quiescent and basic conditions, which is based on the homogeneous precipitation of silica due to  
 the

basic hydrolysis of Et acetate. Firstly, the synthetic parameters affecting the mesostructure were investigated. The hydrolysis rate of Et acetate plays the most important role in this procedure, which provides with protons to condensate silica species and controls the rate of silica polycondensation. Higher EtAc/Na<sub>2</sub>SiO<sub>3</sub> ratio, higher ageing temperature than

313

K, or addition of anionic surfactant sodium dodecyl benzene sulfonate as co-surfactant will all result in fast condensation of silica species, which is unfavorable for the formation of mesostructures. And fluoride ions added at aging step has deleterious effect on the formation of the mesostructures because fluoride catalytically accelerates the polycondensation of silica species, while the introduction of fluoride ions during the hydrothermal treatment has a little influence. Finally, the samples synthesized by this procedure were characterized by XRD, BET, TG-DSC and SEM.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:420789 CAPLUS  
DN 144:393754  
TI Synthesis of mesoporous silica by using  
anionic surfactant  
AU Yokoi, Toshiyuki; Yoshitake, Hideaki; Tatsumi, Takashi  
CS Division of Materials Science and Chemical Engineering, Graduate school of  
Engineering, Yokohama National University, Hodogaya-ku, Yokohama,  
240-8501, Japan  
SO Studies in Surface Science and Catalysis (2004), 154A(Recent Advances in  
the Science and Technology of Zeolites and Related Materials), 519-527  
CODEN: SSCTDM; ISSN: 0167-2991  
PB Elsevier B.V.  
DT Journal  
LA English  
AB The first synthesis of mesoporous silica via the S-I+  
(S-: anionic surfactant and I+: cationic silicates)  
pathway using an anionic surfactant has been  
demonstrated. The S-I- pathway is promoted by utilization of  
3-aminopropyltriethoxysilane, an organoalkoxysilane containing cationic  
functional group, which can interact with the anionic head group. A  
variety of com. and well-known anionic surfactants  
such as sodium dodecylbenzenesulfonate, sodium dodecylsulfate and lauric  
acid sodium salt can be used for the formation of a silica-micelle  
composite. In this novel pathway, the electrostatic interaction between  
the pos. charged amino groups in 3-aminopropyltriethoxysilane and the neg.  
charged sulfate head groups in sodium dodecyl sulfate is a driving force  
for the self-assembly of the silica-micelle composite. Extraction of the  
surfactant by acid treatment led to the inorg.-organic hybrid  
mesoporous silica containing a large amount of aminopropyl  
groups. Calcination of the silica-micelle composite at 823 K led to the  
removal of the aminopropyl moieties as well as the surfactant used.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:411727 CAPLUS  
DN 143:104143  
TI Nonionic Block Copolymer and Anionic Mixed Surfactants Directed Synthesis  
of Highly Ordered Mesoporous Silica with Bicontinuous  
Cubic Structure  
AU Chen, Dehong; Li, Zheng; Yu, Chengzhong; Shi, Yifeng; Zhang, Zhendong; Tu,  
Bo; Zhao, Dongyuan  
CS Department of Chemistry, Shanghai Key Laboratory of Molecular Catalysis  
and Innovative Materials, Fudan University, Shanghai, 200433, Peop. Rep.  
China  
SO Chemistry of Materials (2005), 17(12), 3228-3234

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

AB Mesoporous silica with Ia.hivin.3d structure has been successfully prepared by using mixed surfactants of com. available nonionic block copolymer P123 (EO20PO70EO20) and anionic sodium dodecyl sulfate (SDS) as structure-directing agents through an acid-catalyzed silica sol-gel process. XRD, TEM, and N2 sorption measurements show that the products have highly ordered bicontinuous cubic mesostructure with high surface area (.apprx.770 m2/g), large pore volume (.apprx.1.5 cm3/g), and uniform pore size (.apprx.10 nm). Effects of preparation parameters on the formation of the mesostructure have been extensively investigated. It is found that the molar ratios of SDS/P123 between 2.1 and 2.5 and that of silicic species to P123 in the range from 40 to 75 are favorable for the formation of highly ordered Ia.hivin.3d mesostructure. Prolonging hydrothermal treatment time leads to almost unchanged cell parameters of the products, whereas there is obvious increase of the pore sizes and pore volume. The results show that resultant template-free mesoporous silica products have excellent thermal stability, and they are more stable in N2 atmosphere than in air. Morphologies of the resultant materials can be further controlled by adding inorg. salt (such as Na2SO4) into the mixed surfactants system. Coral- and petaline-like mesoporous silica with continuous skeletons can be obtained. Understanding this synthesis system might be useful for economical and large-scale production of mesoporous materials with controllable structures.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:70049 CAPLUS

DN 142:320903

TI Micro- and mesoporous silicas synthesized in acidic water-ethanol solution of equimolar catanionic surfactant

AU Wang, Yi Meng; Zhuang, Ting Ting; Cao, Yi; Jiang, Qi; Zhu, Jian Hua

CS Key Laboratory of Mesoscopic Chemistry, Department of Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China

SO Journal of Non-Crystalline Solids (2005), 351(4), 346-350

CODEN: JNCSBJ; ISSN: 0022-3093

PB Elsevier B.V.

DT Journal

LA English

AB Porous silicas with combined micro- and mesoporosity are synthesized in acidic water-ethanol solution of equimolar catanionic mixture, where the mesopores are narrowly and uniformly distributed, and the micropores generate due to the addition of ethanol. To vary the pH value of the synthetic mixture can also change the ratio of micro-/mesopores volume in the resulting samples. Compared with other amorphous silica gels and ordered mesoporous silicas including MCM-41, MCM-48 and SBA-15, these micro- and mesoporous silicas show much improved adsorptive capacity for volatile nitrosamines.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:1054452 CAPLUS

DN 142:40845

TI method to produce mesoporous silica

IN Tatsumi, Takashi; Yoshitake, Hideaki; Yokoi, Toshiyuki; Che, Shu-nai; Sakamoto, Kazutami

PA Ajinomoto Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004345895	A	20041209	JP 2003-144187	20030521
	US 2004267038	A1	20041230	US 2003-716427	20031120
PRAI	JP 2003-144187	A	20030521		

AB The mesoporous SiO<sub>2</sub> is produced by mixing an anionic surfactant, a silicate monomer, and a basic silane having a general formula of (R<sub>1</sub>O)<sub>3</sub>Si-X-NR<sub>2</sub>R<sub>3</sub>, where R<sub>1</sub>-3 are linear- or branched-chain alkyl or H, and X is linear- or branched-chain alkylene. The method synthesizes mesoporous SiO<sub>2</sub> having high structural order utilizing the anionic surfactant micelles.

L3 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:85668 CAPLUS

DN 140:296296

TI Structural Investigations of AMS-n Mesoporous Materials by Transmission Electron Microscopy

AU Garcia-Bennett, Alfonso E.; Terasaki, Osamu; Che, Shunai; Tatsumi, Takashi  
CS Structural Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, S-10691, Swed.

SO Chemistry of Materials (2004), 16(5), 813-821

CODEN: CMATEX; ISSN: 0897-4756

PB American Chemical Society

DT Journal

LA English

AB A novel synthesis route for mesoporous silicates using anionic surfactants was recently reported. It was advanced that materials synthesized using anionic surfactants and aminosilane groups as co-structure directing agents gave highly ordered, novel mesoporous materials with unprecedented structural properties. Here the authors present an in-depth high-resolution TEM (HRTEM) study on the structural characteristics of these novel mesoporous solids denoted AMS-n (anionic mesoporous silicas). These materials show increased order in comparison with conventional mesoporous structures as a result of the long-range periodicity of structural modulations. Structural defects formed in these materials were studied using electron diffraction (ED) and Fourier transform (FT) diffractograms. In addition the authors present a new cubic mesostructure AMS-8 (space group Fd.hivin.3m). These new materials show promising new pore connectivities and morphologies making them ideal for applications ranging from catalysts' supports to gas separation, and from nanodevices to drug delivery.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 24 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:933556 CAPLUS

DN 140:188103

TI A novel anionic surfactant templating route for synthesizing mesoporous silica with unique structure

AU Che, Shunai; Garcia-Bennett, Alfonso E.; Yokoi, Toshiyuki; Sakamoto, Kazutami; Kunieda, Hironobu; Terasaki, Osamu; Tatsumi, Takashi

CS Faculty of Engineering, Division of Materials Science and Chemical Engineering, Yokohama National University, 79-5 Tokiwadai, Yokohama, 240-8501, Japan

SO Nature Materials (2003), 2(12), 801-805

CODEN: NMAACR; ISSN: 1476-1122

PB Nature Publishing Group

DT Journal

LA English

AB Anionic surfactants are used in greater volume than any other surfactants because of their highly potent detergency and low cost of manufacture. However, they have not been used as templates for synthesizing mesoporous silica. Here we show a templating route for

preparing mesoporous silicas based on self-assembly of anionic surfactants and inorg. precursors. We use aminosilane or quaternized aminosilane as co-structure-directing agent (CSDA), which is different from previous pathways. The alkoxysilane site of CSDA is co-condensed with inorg. precursors; the ammonium site of CSDA, attached to silicon atoms incorporated into the wall, electrostatically interacts with the anionic surfactants to produce well-ordered anionic-surfactant-templated mesoporous silicas (AMS). These have new structures with periodic modulations as well as two-dimensional hexagonal and lamellar phases. The periodic modulations may be caused by the coexistence of micelles that differ in size or curvature, possibly owing to local chirality. These mesoporous silicas provide a new family of mesoporous materials as well as shedding light on the structural behavior of anionic surfactants.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 25 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:871190 CAPLUS  
DN 139:397503  
TI Synthesis of anionic-surfactant-templated  
mesoporous silica using organoalkoxysilane-containing  
amino groups  
AU Yokoi, Toshiyuki; Yoshitake, Hideaki; Tatsumi, Takashi  
CS Division of Materials Science and Chemical Engineering, Graduate School of  
Engineering, Yokohama National University, Hodogaya, Yokohama, 240-8501,  
Japan  
SO Chemistry of Materials (2003), 15(24), 4536-4538  
CODEN: CMATEX; ISSN: 0897-4756  
PB American Chemical Society  
DT Journal  
LA English  
AB Mesoporous silica was prepared by dissolving sodium  
dodecyl sulfate in a water-ethanol mixture (molar ratio 9:1), adding  
3-aminopropyltriethoxysilane and tetra-Et orthosilicate, stirring for 1 h  
and ambient temperature, and keeping statically at 373 K for 2 days. The  
resulting white precipitate was filtered, washed in deionized water and dried  
in  
air at 373 K. The anionic templating route suggests a structural control  
by functional groups in inorg. precursors for the formation of mesoporous  
metal oxides.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 26 OF 26 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:867676 CAPLUS  
DN 140:188093  
TI Investigation of the surfactants in CTAB-templated mesoporous  
silica by 1H HRMAS NMR  
AU Sizun, C.; Raya, J.; Intasiri, A.; Boos, A.; Elbayed, K.  
CS Bat 23B, CNRS, Institut de Chimie des Substances Naturelles, Gif sur  
Yvette, 91198, Fr.  
SO Microporous and Mesoporous Materials (2003), 66(1), 27-36  
CODEN: MIMMFJ; ISSN: 1387-1811  
PB Elsevier Science B.V.  
DT Journal  
LA English  
AB High resolution magic angle spinning (HRMAS) leads to nearly liquid-state  
quality NMR spectra of mols. with restrained mobility. The authors show  
here how 1H HRMAS can be applied to organic mols. encapsulated inside  
mesoporous materials. The authors studied an uncalcined  
surfactant-templated mesoporous SiO2 synthesized from a mixture of cationic  
and anionic surfactants, CTAB and HPMSP. The  
pyrazolone HPMSP is adding cation-extracting properties to the SiO2, which

contains 60% of organic compds. in weight MASNMR at moderate spinning speeds allows to resolve proton spectra on samples where a small amount of MeOH is added to the dried as-synthesized SiO2. NMR expts. allow to distinguish between solvated surfactants involved in ion pairs and less mobile templating surfactants. Liquid state NMR expts. like 2-dimensional NOESY can be performed in these conditions, but suffer from spin diffusion. 1D and 2-dimensional solid-state NMR expts., like rotational resonance, which take advantage of the partly solid-state behavior of the surfactant system, are proposed as alternative expts. to get information about spatial connectivity.

RE.CNT 38      THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-20.28	-20.28

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NEWS	6	NOV 10	CA/CAPLUS F-Term thesaurus enhanced
NEWS	7	NOV 10	STN Express with Discover! free maintenance release Version 8.01c now available
NEWS	8	NOV 20	CA/CAPLUS to MARPAT accession number crossover limit increased to 50,000
NEWS	9	DEC 01	CAS REGISTRY updated with new ambiguity codes

NEWS 10 DEC 11 CAS REGISTRY chemical nomenclature enhanced  
 NEWS 11 DEC 14 WPIDS/WPINDEX/WPIX manual codes updated  
 NEWS 12 DEC 14 GBFULL and FRFULL enhanced with IPC 8 features and  
 functionality  
 NEWS 13 DEC 18 CA/CAPLUS pre-1967 chemical substance index entries enhanced  
 with preparation role  
 NEWS 14 DEC 18 CA/CAPLUS patent kind codes updated  
 NEWS 15 DEC 18 MARPAT to CA/CAPLUS accession number crossover limit increased  
 to 50,000  
 NEWS 16 DEC 18 MEDLINE updated in preparation for 2007 reload  
 NEWS 17 DEC 27 CA/CAPLUS enhanced with more pre-1907 records  
 NEWS 18 JAN 08 CHEMLIST enhanced with New Zealand Inventory of Chemicals  
 NEWS 19 JAN 16 CA/CAPLUS Company Name Thesaurus enhanced and reloaded  
 NEWS 20 JAN 16 IPC version 2007.01 thesaurus available on STN  
 NEWS 21 JAN 16 WPIDS/WPINDEX/WPIX enhanced with IPC 8 reclassification data  
 NEWS 22 JAN 22 CA/CAPLUS updated with revised CAS roles  
 NEWS 23 JAN 22 CA/CAPLUS enhanced with patent applications from India  
 NEWS 24 JAN 29 PHAR reloaded with new search and display fields  
 NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in  
 multiple databases  
 NEWS 26 FEB 13 CASREACT coverage to be extended  
 NEWS 27 FEB 15 PATDPASPC enhanced with Drug Approval numbers  
 NEWS 28 FEB 15 RUSSIAPAT enhanced with pre-1994 records  
 NEWS 29 FEB 23 KOREAPAT enhanced with IPC 8 features and functionality  
 NEWS 30 FEB 26 MEDLINE reloaded with enhancements  
 NEWS 31 FEB 26 EMBASE enhanced with Clinical Trial Number field  
 NEWS 32 FEB 26 TOXCENTER enhanced with reloaded MEDLINE  
 NEWS 33 FEB 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements  
 NEWS 34 FEB 26 CAS Registry Number crossover limit increased from 10,000  
 to 300,000 in multiple databases

NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT  
 MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
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 NEWS X25 X.25 communication option no longer available

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 17:29:28 ON 13 MAR 2007

=> s mesoporous silica complex  
 THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE  
 Some commands only work in certain files. For example, the EXPAND  
 command can only be used to look at the index in a file which has an  
 index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of  
 commands which can be used in this file.

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

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FILE LAST UPDATED: 12 Mar 2007 (20070312/ED)

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=> s mesoporous silica complex

15846 MESOPOROUS  
528571 SILICA  
4020 SILICAS  
528998 SILICA  
(SILICA OR SILICAS)  
1324951 COMPLEX  
735743 COMPLEXES  
1614373 COMPLEX  
(COMPLEX OR COMPLEXES)  
L1 3 MESOPOROUS SILICA COMPLEX  
(MESOPOROUS (W) SILICA (W) COMPLEX)

=> s hydrothermal synthesis

70412 HYDROTHERMAL  
5 HYDROTHERMALS  
70415 HYDROTHERMAL  
(HYDROTHERMAL OR HYDROTHERMALS)  
1300179 SYNTHESIS  
4 SYNTHESISES  
68975 SYNTHESSES  
1 SYNTHESISESES  
1338837 SYNTHESIS  
(SYNTHESIS OR SYNTHESISES OR SYNTHESSES OR SYNTHESISESES)  
L2 6977 HYDROTHERMAL SYNTHESIS  
(HYDROTHERMAL (W) SYNTHESIS)

=> s L1 and L2

L3 0 L1 AND L2

=> d L1 1-3 bib abs

L1 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2007:159294 CAPLUS  
TI Macro-mesoporous silicas complex and the  
carbon replica  
AU Sun, Junming; Ma, Ding; Zhang, He; Bao, Xinhe; Weinberg, Gisela; Su,  
Dangsheng  
CS State Key Laboratory of Catalysis, Dalian Institute of Chemical Physics,  
Chinese Academy of Sciences, Dalian, 116023  
SO Microporous and Mesoporous Materials (2007), 100(1-3), 356-360



CODEN: MIMMFJ; ISSN: 1387-1811

PB Elsevier B.V.

DT Journal

LA English

AB Novel macroporous silicas with ordered mesoporous wall structures (.apprx.15 nm in pore size) have been synthesized by finely balancing the emulsification of the oil phase with the self-assembly of the amphiphilic block copolymers. The nanocasting method was used to produce hierarchically ordered macro-mesoporous carbon materials. These porous materials have potential applications in catalysis, sorption, separation, etc.

L1 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:1240476 CAPLUS

DN 146:12616

TI Mesoporous silica complex powder containing chitosan-lipase conjugates capable of decomposing sebum without skin stimulation, and manufacturing method thereof

IN Kwon, Sun Sang; Jeon, Sang Hoon; Park, Chang Man; Shim, Min Kyung; Nam, Gae Won; Yi, Seung Hwan; Kim, Duck Hee; Chang, Ih Seop; Shon, Jeong Kuk; Kim, Ji Man

PA Amorepacific Corporation, S. Korea

SO Repub. Korean Kongkae Taeho Kongbo, No pp. given

CODEN: KRXXA7

DT Patent

LA Korean

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	KR 2006067294	A	20060620	KR 2004-105553	20041214
PRAI	KR 2004-105553		20041214		

AB Mesoporous silica complex powder containing chitosan-lipase conjugates and a manufacturing method thereof are provided to decompose sebum and reduce skin stimulation by adsorbing fatty acids produced from the sebum decomposition, so that stability of cosmetics on the skin is improved. The method for manufacturing the mesoporous silica complex powder containing chitosan-lipase conjugates comprises the steps of: reacting a multi-functional crosslinking agent with lipase to activate the lipase; conjugating the activated lipase with a water-soluble chitosan medium to prepare the water-soluble chitosan-lipase conjugate; preparing the mesoporous silica having particle size of 1-5  $\mu$ m, pore size of 7-15 nm and sp. surface area of 900-300m.cxa. 2/g; and mixing the chitosan-lipase conjugate with the mesoporous silica, wherein the weight ratio of silica and chitosan-lipase conjugate is 1:5-10.

L1 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:981886 CAPLUS

DN 141:56004

TI Ti complexes assembled HMS as effective catalysts for epoxidation of alkene

AU Fu, Zaihui; Yin, Dulin; Xie, Qingji; Zhao, Wei; Lu, Aixia; Yin, Donghong; Xu, Youzhi; Zhang, Luxi

CS College of Chemistry and Chemical Engineering, Hunan Normal University, Changsha, 410081, Peop. Rep. China

SO Journal of Molecular Catalysis A: Chemical (2004), 208(1-2), 159-166

CODEN: JMCCF2; ISSN: 1381-1169

PB Elsevier Science B.V.

DT Journal

LA English

OS CASREACT 141:56004

AB The exchange reactions of Ti compds. and hexagonal mesoporous silica (HMS) supports were studied in detail by UV-Vis diffuse reflection spectroscopy, FT-IR spectroscopy, N2 volumetric adsorption, chemical and elemental analyses. The exchange of  $\text{TiO}(\text{Pr})_4$  and  $\text{TiCl}_4$  with the surface hydroxyls of the HMS proceeded readily and caused distortion of the Si-O4 tetrahedron, as indicated by a new band at 960  $\text{cm}^{-1}$  in the IR spectra. The UV-Vis

diffuse reflection spectra showed highly dispersed Ti species on the surface of HMS. The surface area and pore volume of HMS after Ti exchange were significantly smaller, further confirming the introduction of Ti complexes into the channels of HMS. A chiral Ti tartrate complex was grafted onto HMS through three pathways. In epoxidn. of styrene and cyclohexene with tetra-Bu hydroperoxide (TBHP), the Ti-HMS catalysts showed high catalytic activity and selectivity toward epoxides. The catalyst prepared with  $\text{TiOiPr}_4$  at 393 K possessed the best catalytic activity, but the lowest selectivity, due to Lewis acid sites which catalyze the rearrangement of epoxides. The assembled catalysts can be recycled over many cycles without significant loss of activity. The HMS catalysts with chiral Ti tartrate complex were enantioselective for asym. epoxidn. of styrene with TBHP, with about 20 - 32% enantiomeric excess in the product yield.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s process

2392365 PROCESS  
1626581 PROCESSES

L4 3570567 PROCESS  
(PROCESS OR PROCESSES)

=> s L1 and L4

L5 0 L1 AND L4

=> s anionic surfactant

119969 ANIONIC  
259 ANIONICS  
120072 ANIONIC  
(ANIONIC OR ANIONICS)

189081 SURFACTANT  
169428 SURFACTANTS  
240370 SURFACTANT  
(SURFACTANT OR SURFACTANTS)

L6 20975 ANIONIC SURFACTANT  
(ANIONIC(W) SURFACTANT)

=> s L1 and L6

L7 0 L1 AND L6

=> s prepn

2789302 PREPN  
208003 PREPNS

L8 2946052 PREPN  
(PREPN OR PREPNS)  
75% OF LIMIT FOR TOTAL ANSWERS REACHED

=> s l8 and L1

L9 1 L8 AND L1

=> d L9 bib abs

L9 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:981886 CAPLUS

DN 141:56004

TI Ti complexes assembled HMS as effective catalysts for epoxidation of alkene

AU Fu, Zaihui; Yin, Dulin; Xie, Qingji; Zhao, Wei; Lu, Aixia; Yin, Donghong; Xu, Youzhi; Zhang, Luxi

CS College of Chemistry and Chemical Engineering, Hunan Normal University, Changsha, 410081, Peop. Rep. China

SO Journal of Molecular Catalysis A: Chemical (2004), 208(1-2), 159-166

CODEN: JMCCF2; ISSN: 1381-1169

PB Elsevier Science B.V.  
DT Journal  
LA English  
OS CASREACT 141:56004  
AB The exchange reactions of Ti compds. and hexagonal mesoporous silica (HMS) supports were studied in detail by UV-Vis diffuse reflection spectroscopy, FT-IR spectroscopy, N2 volumetric adsorption, chemical and elemental analyses. The exchange of TiO<sub>2</sub>Pr<sub>4</sub> and TiCl<sub>4</sub> with the surface hydroxyls of the HMS proceeded readily and caused distortion of the Si-O<sub>4</sub> tetrahedron, as indicated by a new band at 960 cm<sup>-1</sup> in the IR spectra. The UV-Vis diffuse reflection spectra showed highly dispersed Ti species on the surface of HMS. The surface area and pore volume of HMS after Ti exchange were significantly smaller, further confirming the introduction of Ti complexes into the channels of HMS. A chiral Ti tartrate complex was grafted onto HMS through three pathways. In epoxidn. of styrene and cyclohexene with tetra-Bu hydroperoxide (TBHP), the Ti-HMS catalysts showed high catalytic activity and selectivity toward epoxides. The catalyst prepared with TiO<sub>2</sub>Pr<sub>4</sub> at 393 K possessed the best catalytic activity, but the lowest selectivity, due to Lewis acid sites which catalyze the rearrangement of epoxides. The assembled catalysts can be recycled over many cycles without significant loss of activity. The HMS catalysts with chiral Ti tartrate complex were enantioselective for asym. epoxidn. of styrene with TBHP, with about 20 - 32% enantiomeric excess in the product yield.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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	ENTRY	SESSION
FULL ESTIMATED COST	31.29	31.50
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-3.12	-3.12

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functionality  
NEWS 13 DEC 18 CA/CAPLUS pre-1967 chemical substance index entries enhanced  
with preparation role  
NEWS 14 DEC 18 CA/CAPLUS patent kind codes updated  
NEWS 15 DEC 18 MARPAT to CA/CAPLUS accession number crossover limit increased  
to 50,000  
NEWS 16 DEC 18 MEDLINE updated in preparation for 2007 reload  
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NEWS 25 JAN 29 CAS Registry Number crossover limit increased to 300,000 in  
multiple databases  
NEWS 26 FEB 13 CASREACT coverage to be extended  
NEWS 27 Feb 15 PATDPASPC enhanced with Drug Approval numbers  
NEWS 28 Feb 15 RUSSIAPAT enhanced with pre-1994 records  
NEWS 29 Feb 23 KOREAPAT enhanced with IPC 8 features and functionality  
NEWS 30 Feb 26 MEDLINE reloaded with enhancements  
NEWS 31 Feb 26 EMBASE enhanced with Clinical Trial Number field  
NEWS 32 Feb 26 TOXCENTER enhanced with reloaded MEDLINE  
NEWS 33 Feb 26 IFICDB/IFIPAT/IFIUDB reloaded with enhancements  
NEWS 34 Feb 26 CAS Registry Number crossover limit increased from 10,000  
to 300,000 in multiple databases  
  
NEWS EXPRESS NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.  
  
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0.21

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=> ....Testing the current file.... screen

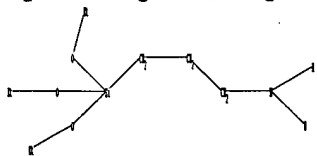
ENTER SCREEN EXPRESSION OR (END):end

=> screen 966 AND 1006

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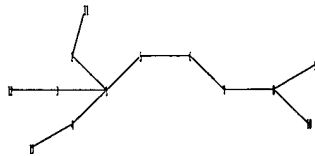
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Uploading C:\Program Files\Stnexp\Queries\10716427.str



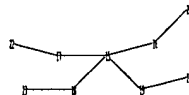
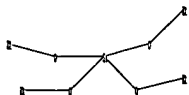
+

mesoporous  
silica complex



+

mesoporous  
silica complex



chain nodes :  
 1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23  
 chain bonds :  
 1-2 1-3 1-4 1-5 2-11 3-12 4-13 5-6 6-7 7-8 8-9 8-10 15-16 15-17 15-18  
 15-19 16-20 17-22 18-23 19-21  
 exact bonds :  
 1-2 1-3 1-4 1-5 2-11 3-12 4-13 5-6 6-7 7-8 8-9 8-10 15-16 15-17 15-18  
 15-19 16-20 17-22 18-23 19-21

Match level :  
 1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
 11:Atom 12:Atom 13:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom  
 21:Atom 22:Atom 23:Atom  
 fragments assigned reactant/reagent role:  
 containing 1

L2 STRUCTURE UPLOADED

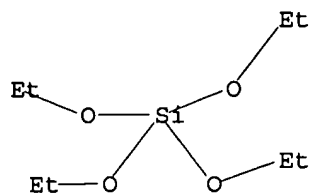
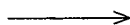
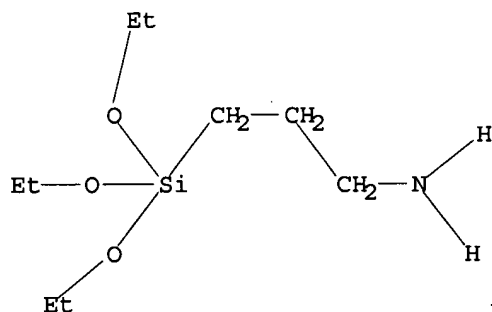
=> que L2 AND L1

L3 QUE L2 AND L1

=> d L2

L2 HAS NO ANSWERS

L2 STR



Structure attributes must be viewed using STN Express query preparation.

=> s L2 full

FULL SEARCH INITIATED 08:54:45 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 8248 TO ITERATE

100.0% PROCESSED 8248 ITERATIONS  
SEARCH TIME: 00.00.01

0 ANSWERS

L4 0 SEA SSS FUL L2

=>

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=>

Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

172.55

172.76

STN INTERNATIONAL LOGOFF AT 08:55:01 ON 15 MAR 2007